

**REMARKS**

The Office Action mailed on October 19, 2004, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1-33 were pending in the present application, with claims 4-9, 11 and 25-26 being provisionally withdrawn from consideration. By this paper, Applicants do not cancel or add any claims. Therefore, claims 1-33 remain pending in the present application.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

**Reference Characters**

Reference characters have been retained in the claims but have no effect on the claim scope per MPEP § 608.01(m).

**Claim Rejections Under 35 U.S.C. §103(a)**

Claims 1-3, 10, 12, 17-21, 23, 24 and 27-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Akerfeldt (USP 5,938,624) in view of Hammarström (USP 5,938,624) and Lafontaine (USP 5,501,228), while claims 14-16 and 22 stand rejected under the same statute in view of the just mentioned references when combined with Wallace (USP 6,371,972). Claim 13 stands rejected as being obvious in view of Akerfeldt, Lafontaine and Koelle (USP 6,373,705). Applicants respectfully traverse the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference

or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that the first, second and third criteria of MPEP § 2143 have not been met in the Office Action.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 was satisfied in the Office Action (which it is not, as explained below), the cited references still do not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Independent claim 1 recites that “*the core wire does not have a solid circular cross section*,” and “the core wire (3) is stiffer than the section of the guide wire core that substantially extends through the guide wire (2) *substantially* from the distal end of the guide wire (2) *substantially* to the proximal end of the guide wire (2).” Independent claims 23, 24, 27 and 28 are variations on claim 1.

**Cross Section:** The Office Action correctly notes that Akerfeldt does not teach a core wire that does not have a solid circular cross section.<sup>1</sup> The Office Action introduces Lafontaine to remedy the deficiencies of Akerfeldt, asserting that Lafontaine “discloses a male connector for a guide wire wherein the *core wire (34)* does not have a solid circular cross-section,” citing Fig. 6b. (Office Action, page 3, lines 19-20, emphasis added.) However, element 34 is not a core wire of a male connector. Fig. 6b depicts a cross section “A-A” of the portion of the *guide wire* shown in Fig. 6a bisected by the cut “A-A.” (See upper-rightmost portion of Fig. 6a.) That is, element 34 is a guide wire core, not a core wire for a connector. Indeed, the connector at the proximal end of the guide wire of Lafontaine is depicted in the lower portion of Fig. 6a, while the upper portion of Fig. 6a depicts the distal

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<sup>1</sup> The Office Action also acknowledges that Akerfeldt does not teach the shape of the core wire as claimed in independent claims 23, 24, 27 and 28.

portion of the guide wire. Therefore, the cross-section A-A shown in Fig. 6b is taken about as far away as possible from the connector. In sum, Lafontaine does not remedy the deficiencies of Akerfeldt regarding the claimed shapes of the core wire.

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**Substantial Extension:** The Office Action asserts that the “guide wire core of Akerfeldt *substantially* extends through the guide wire from a distal end to a proximal end,” relying on *In re Nehrenberg* and Fig. 18 of Akerfeldt showing a tapered distal *tip* of a guide wire core. Applicants first note that, as would immediately be recognized by the ordinary artisan, an exemplary embodiment according to the independent claims for treating coronary diseases would have a guide wire that may extend roughly 4-8 feet from the distal end to the proximal end! A guide wire core, for a guide wire according to claim 1 extending 4-8 feet, will extend many feet to “substantially” extend from the distal end to the proximal end.

Akerfeldt teaches that the guide wire core according to the embodiment of Figs. 17 and 18 extends **a very small distance** inside the guide wire: “The first part of the core wire 1 in the proximal connector is inserted *a few millimeters* in the proximal end of the guide wire.” (Akerfeldt, col. 7, lines 2-4, emphasis added.) “The second part of the core wire 36 is inserted *a few millimeters* in the distal end of the guide wire.” (Akerfeldt, col. 7, lines 6-7, emphasis added.) That is, no reasonable interpretation of the term “substantially” would permit the language of the claims to read on Akerfeldt’s figures. Applicants respectfully submit that *In re Nehrenberg* is being misconstrued, and, in fact, is being used in a manner that is inconsistent with the MPEP.

MPEP §2173.05(b)(D), which cites *In re Nehrenberg*, does state that the term is a broad term. However, each example of the use of “substantially” in §2173.05(b)(D) points out that the term is to be interpreted in light of the specification or what one of ordinary skill in the art would interpret the claim recitations modified by the term to cover. Applicants respectfully submit that the term “substantially” is being interpreted by the PTO in a manner that is contradictory to both the terms’ plain meaning as would be understood by the ordinary artisan and the teachings of the specification.

In sum, Akerfeldt does not teach the recitations regarding a core wire as it relates to a section of guide wire core that substantially extends through the guide wire substantially from the distal end substantially to the proximal end. The guide wire core of Akerfeldt's Figs. 17-18 simply does not extend in the manner claimed. However, the Office Action prudently anticipates the above arguments and introduces Hammarström in a preemptive attempt to address the deficiencies of Akerfeldt vis-à-vis a guide wire core as claimed. Even with the Hammarström guide wire core, it would not have been obvious to utilize the Hammarström guide wire core in the guide wire of Akerfeldt, as will be explained in detail below.

Lack of Suggestion or Motivation to Modify or Combine the References

The Office Action does not sufficiently identify where the prior art suggests the desirability of the claimed invention. MPEP § 2143.01, entitled *Suggestion or Motivation to Modify the References*, states that the "prior art *must* suggest the desirability of the claimed invention." (emphasis added; citations omitted) It further states that obviousness

can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. 'The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.'

(Citations omitted.)

The Office Action states that it "would have been obvious . . . to modify the core wire disclosed by Akerfeldt et al. to include the cross-section as disclosed by Lafontaine et al. to form a space through which the conductors can extend." Assuming *arguendo* that the teachings of Lafontaine were directed towards a core wire for a connector (as opposed to a guide wire core), the ordinary artisan would not have been motivated to modify Akerfeldt to form a space for the conductors because Akerfeldt already provides a space for the

conductors. Fig. 17 shows conductors 7 extending from the guide wire to conductive members 5. Fig. 18 shows similar spacing. That is, the ordinary artisan would not have been motivated to modify the connector of Akerfeldt (a presumptively acceptable connector since the prior art does not identify deficiencies with such a connector) to provide space for the conductors, since the ordinary artisan would have been perfectly content with the connector of Akerfeldt. Only the innovator would be motivated to modify a presumably acceptable connector. The motivation proffered in the Office Action is simply not sufficient to formulate a *prima facie* case of obviousness without recognition of what the ordinary artisan would have understood as a way to improve Akerfeldt.

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The ordinary artisan would not have been motivated to seek out Lafontaine for combination with Akerfeldt. As Applicants have discovered, there is a need to reduce the likelihood that if the connector bends, the conductors extending along the core wire between the core wire (a rigid member) and the conductive members (also rigid members) disposed along the male connector are not squeezed between the core wire and the conductive members, thus damaging the conductors. A person of ordinary skill, when faced with the problem of damaged connectors, assuming *arguendo* that he/she would have identified the root cause of the damage, would not have looked to Lafontaine, because Lafontaine teaches that a shield 54 made from polyimide is used along the connector. Polyimide is a soft material, and, therefore, does not teach a conductor extending between two rigid members. Applicants respectfully submit that the ordinary artisan would look to a reference where a conductor extended between two rigid members for a solution to the above identified problem, thus the ordinary artisan would have disregarded Lafontaine as containing irrelevant information.

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The ordinary artisan would have been discouraged from modifying the teachings of Akerfeldt, depicted in Figs. 17 and 18, to include the guide wire of Lafontaine. That is, Akerfeldt teaches away from the proffered modification. A main point of utility of

Akerfeldt's Figs. 17-18 embodiment is to obtain a guide wire without a core wire that substantially extends inside the guide wire. "FIGS. 17 and 18 illustrate another embodiment of the male connector, wherein the core wire does not extend as a single piece throughout the guide wire and male connector. In order to increase a torsional strength of the guide wire with which the male connector is used, a thickness of the wall of the guide wire 3 may be increased." (Akerfeldt, col. 6, lines 58-63.) That is, to compensate for the lack of a guide wire core, the wall of the guide wire is thickened. Akerfeldt even states that "there is insufficient space for the core wire 1 inside the guide wire." (Akerfeldt, col. 6, lines 63-65.) Akerfeldt simply teaches away from any modification that would result in a core wire that substantially extends as claimed.

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MPEP § 2143.01, subsection 6 states that "the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959)." In *Ratti*, the CCPA held that the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference." This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes the principle of operation of the reference, **even if that modification is workable or easily implemented.**

With the above in mind, it is respectfully submitted that the teachings of Akerfeldt vis-à-vis the embodiment of Figs. 17-18 rely on a principle akin to an exoskeleton in that Akerfeldt utilizes an increased wall thickness to increase the strength of the guide wire. Applicants further submit that the teachings of Hammarström vis-à-vis the guide wire core rely on a principle akin to an endoskeleton (i.e., a spine), in that Hammarström utilizes a relatively strong guide wire core extending the length of the guide wire to provide strength for the guide wire.

Applicants respectfully submit that substituting or even using the guide wire core of Hammarström to provide strength to the guide wire of Akerfeldt would change the principle

of operation of Akerfeldt. Since modifying Akerfeldt to utilize a guide wire core meeting the recitations of the claims changes a principle of operation of Akerfeldt, just as changing the rigid seal to a resilient seal was found to change the principle of operation in *Ratti*, “the teachings of [Akerfeldt] are **not sufficient** to render the claims *prima facie* obvious.” (MPEP § 2143.01, emphasis added.)

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In summary, because of the lack of suggestion or motivation in the prior art to modify the reference, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established.

#### Lack of a Reasonable Expectation of Success

MPEP § 2143.02 permits references to be modified or combined to reject a claim as obvious **only** if there is a reasonable expectation of success. There is no evidence in the references, and certainly none identified in the Office Action, that one of ordinary skill in the art would have a reasonable expectation of success in achieving Applicants’ invention by combining the references. For example, as noted above, Akerfeldt specifically states that “there is ***insufficient*** space for the core wire 1 inside the guide wire.” (Akerfeldt, col. 6, lines 63-65, emphasis added.) The ordinary artisan, who by definition is not an innovator, after reading this statement, would conclude that the introduction of a guide wire core into the embodiment of Figs. 17 and 18 of Akerfeldt would not likely be possible. That is, the ordinary artisan would not reasonably expect success. Only the innovator would read the teachings of Akerfeldt and still modify Akerfeldt.

Thus, one of ordinary skill in the art would not see a combination of the references as successfully producing an acceptable guide wire. Because of this, the second criteria of MPEP § 2143 has not been met in the Office Action, and a *prima facie* case of obviousness has therefore not been established.

**Withdrawn Claims**

Claims 4-9, 11 and 25-26 were withdrawn in a prior Office Action. Applicants note that these claims depend from either claim 1 or claim 24. Applicants respectfully request that the PTO rejoin and reconsider claims 4-9, 11 and 25-26 due to their dependency from claims 1 or 24, claims that is allowable.

**Conclusion**

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Foreman is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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By 

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